

Table 16.22 from (1977AJ02): States in  $^{16}\text{O}$  from  $^{15}\text{N}(\text{d}, \text{n})^{16}\text{O}$ ,  $^{15}\text{N}(\text{}^3\text{He}, \text{d})^{16}\text{O}$  and  $^{17}\text{O}(\text{}^3\text{He}, \alpha)^{16}\text{O}$ 

$^{16}\text{O}$ state at (MeV)	$J^\pi; T$	$l^a$	$l^b$	$S^c$	$S^d$	$S^e$	"Best" $S^f$	$S^g$	$S^h$	$S^p$	$l^p$
0	$0^+; 0$	1	1			2.5	3.1	1.33	3.52	0.88	2
6.05	$0^+; 0$		1					0.05	0.16	0.009	2
6.13	$3^-; 0$	2	2	0.72	0.75	0.80		0.40	0.63	0.37	1
6.92	$2^+; 0$	not direct	1 + 3					0.04 <sup>n</sup>		0.022	(2 + 0)
7.12	$1^-; 0$	0	0 + 2	0.33	0.75 <sup>j</sup>	0.32		0.20 <sup>o</sup>	0.54	0.007 <sup>q</sup>	(3 + 1)
8.87	$2^-; 0$	2	2	0.33	0.55	0.44	0.72	0.36	0.55	0.26	1
9.63	$1^-; 0$		0					0.008			
9.85	$2^+; 0$	1	not direct	0.02	< 0.05					0.025	2
10.35	$4^+; 0$		3					0.02		0.025	2
10.95	$0^-; 0$	0	0	0.48	1.25	0.76	0.76	0.50	1.20	0.008	(3 + 1)
11.08	$3^+; 0$	3	3	0.30	0.30	0.30	0.18	0.09		0.044 or 0.086	2
11.26	$0^+; 0$		broad state								
12.44	$1^-; 0$	0	0	(0.16)	0.64 <sup>k</sup>	0.40	0.40	$0.25 \pm 0.1$	0.25		
12.53	$2^-; 0$	2	2	(0.52)	0.50 <sup>l</sup>	0.72 <sup>m</sup>	0.72	$0.45 \pm 0.1$	1.45		
12.80	$0^-; 1$	0	0	(0.40)	1.20	0.44	0.44	$0.40 \pm 0.1$			
12.97	$2^-; 1$	2	2	(0.63)		0.40	0.40	$0.35 \pm 0.1$	0.85	0.38	1
13.10	$1^-; 1$	(0)		(0.63)		0.58	0.58	$\leq 0.4 \pm 0.2$		0.10	1
			2(+0)								
13.13 <sup>i</sup>	$3^-; 0$	(2)				0.32	0.32	$0.12 \pm 0.05$	0.96		
13.26	$3^-; 1$	2	2	(0.60)		0.46	0.46	$0.27 \pm 0.1$	0.96	0.34	1
17.14 <sup>b</sup>	$1^-; 1$										
17.20 <sup>b</sup>	$2^+$										

- <sup>a</sup> (1967FU07, 1971MU09, 1972BO49): (d, n);  $E_d = 4.8 \rightarrow 6$  MeV.
- <sup>b</sup> (1969BO13, 1969FU08, 1971BO02): ( $^3\text{He}$ , d),  $E(^3\text{He}) = 11, 16.0$  and  $24.9$  MeV.
- <sup>c</sup> (1971MU09): (d, n).
- <sup>d</sup> (1972FO17): (d,  $\bar{n}$ ).
- <sup>e</sup> (1972BO49): (d, n),  $E_d = 5 - 6$  MeV.
- <sup>f</sup> “Best” values as discussed by (1972BO49) [from (d, n) and ( $^3\text{He}$ , d) data]. See also (1975HS01).
- <sup>g</sup> (1969BO13, 1971BO02): ( $^3\text{He}$ , d);  $E(^3\text{He}) = 11$  MeV.
- <sup>h</sup> (1969FU08): ( $^3\text{He}$ , d);  $E(^3\text{He}) = 16.0$  and  $24.9$  MeV.
- <sup>i</sup>  $\Gamma = 128$  keV.
- <sup>j</sup> For  $2s_{1/2}$ , 0.18 for  $1d_{3/2}$ .
- <sup>k</sup> For  $2s_{1/2}$ , 0.17 for  $1d_{3/2}$ .
- <sup>l</sup> For  $1d_{3/2}$ , 0.05 for  $1d_{5/2}$ .
- <sup>m</sup> For  $1d_{3/2}$ , 0.62 for  $1d_{5/2}$ .
- <sup>n</sup> For  $1f_{5/2}$ , 0.01 for  $1p_{3/2}$ .
- <sup>o</sup> For  $1s_{1/2}$ .
- <sup>p</sup> (1971BO02): ( $^3\text{He}$ ,  $\alpha$ );  $E(^3\text{He}) = 11$  MeV.
- <sup>q</sup>  $1d_{3/2}$  (1971BO02).